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Case Series

Pregnancy outcomes in women with uterine anomalies: a South Indian case series

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ABSTRACT

Congenital uterine anomalies (CUAs) are important causes of adverse pregnancy outcomes, including miscarriage, malpresentation, and preterm delivery. This case series evaluates obstetric and neonatal outcomes among women with CUAs managed at a tertiary care center in South India. This case series includes seven pregnant women with confirmed uterine anomalies managed at a tertiary care center in South India between January 2023 and December 2024. The anomalies included three cases of unicornuate uterus, three bicornuate uterus, and one complete septate uterus. Six women conceived spontaneously, while one required ovulation induction. Five underwent cesarean section, one had a successful vaginal delivery, and one required emergency laparotomy for a ruptured rudimentary horn. The breech presentation was observed in two cases. Neonatal outcomes were favorable in six cases; one case resulted in neonatal loss due to uterine rupture and maternal hemorrhagic shock. CUAs are associated with increased risks of malpresentation and surgical delivery. Early diagnosis and individualized antenatal care are crucial for optimizing maternal and fetal outcomes.

Keywords: Uterine anomalies, Unicornuate uterus, Bicornuate uterus, Septate uterus

INTRODUCTION

Congenital uterine anomalies (CUAs) result from abnormal development, fusion, or resorption of the Müllerian ducts during embryogenesis, affecting approximately 5–7% of women worldwide.[1] These anomalies, which include unicornuate, bicornuate, septate, and didelphic uteri, can significantly impact fertility and pregnancy outcomes, increasing the risk of miscarriage, preterm labor, malpresentation, and cesarean delivery.[2] The unicornuate uterus is among the rarest and is associated with the highest risk of adverse outcomes, including uterine rupture.[3] Improved imaging modalities such as 3-D ultrasound and MRI have enhanced the early detection and classification of CUAs. However, data on pregnancy outcomes in Indian populations remain limited.[4] This case series aims to describe pregnancy and neonatal outcomes in women with CUAs managed at a tertiary care institute in South India, emphasizing the importance of early diagnosis and tailored obstetric care.

CASE SERIES

This descriptive case series combined retrospective and prospective data from January 2023 to December 2024 at the Department of Obstetrics and Gynaecology, Sri Ramachandra Institute of Higher Education and Research, Chennai. Institutional ethical approval was obtained, and informed consent was taken from all participants.

Inclusion criteria comprised pregnant women diagnosed with uterine anomalies via hysterosalpingography (HSG), ultrasonography, or hysteroscopy. Data collected included demographic details, type of anomaly, obstetric history, mode of conception, antenatal complications, mode of delivery, and neonatal outcomes.

Data were tabulated and analyzed descriptively as given in Table 1.

Case 1

Complete septate uterus

A 24-year-old primigravida presented at 37 weeks of gestation with a breech presentation. She had conceived spontaneously and had an uneventful antenatal course. Imaging confirmed a complete septate uterus. Elective cesarean section was performed due to malpresentation, and a healthy female neonate weighing 2.44 kg was delivered. No neonatal intensive care was required. The maternal postoperative course was uneventful.

Case 2

Bicornuate uterus with ruptured horn

A 26-year-old G2P1 presented at 9 weeks gestation with acute abdominal pain. Ultrasound revealed a ruptured rudimentary horn of a bicornuate uterus. She was immediately taken for an emergency laparotomy. Intraoperative findings confirmed hemoperitoneum secondary to rupture. The fetus was nonviable, and the patient required ICU admission for hemorrhagic shock. Surgical management stabilized her condition.

Case 3

Unicornuate uterus with term vaginal delivery

A 25-year-old primigravida with a known unicornuate uterus presented at term (39 weeks) with a cephalic presentation. Her pregnancy was spontaneous and uncomplicated. Given favorable presentation and absence of contraindications, she underwent successful vaginal delivery. A healthy female neonate weighing 3.12 kg was delivered without complications.

Case 4

Bicornuate uterus following ovulation induction

A 30-year-old G4P1A2 with a bicornuate uterus conceived following ovulation induction. She presented at 37 weeks with a cephalic fetus. No antenatal complications were noted. An elective cesarean section was performed, and a female neonate weighing 2.35 kg was delivered. The postoperative course was uneventful.

Case 5

Primigravida with bicornuate uterus

A 23-year-old primigravida with a spontaneously conceived pregnancy was diagnosed with a bicornuate uterus. At 39 weeks gestation, she presented with a cephalic fetus and underwent elective cesarean delivery due to the uterine anomaly. A healthy female neonate weighing 2.32 kg was delivered. Maternal and neonatal outcomes were favorable.

Case 6

Unicornuate uterus with breech presentation

A 27-year-old primigravida with a unicornuate uterus presented at 38 weeks with a breech fetus. Despite an otherwise normal antenatal course, the malpresentation warranted elective cesarean section. A healthy male neonate weighing 3.04 kg was delivered. No maternal or neonatal complications were observed.

Table 1: Summary of clinical and obstetric characteristics of women with uterine anomalies.

Case	Uterine anomaly	Gravida / para	Mode of concepttion	Gestation (weeks)	Presentation	Antenatal complications	Mode of delivery	Neonatal outcome	Maternal outcome
1	Complete septate uterus	G1	Spontaneous	37	Breech	None	Elective cesarean	Female, 2.44 kg, no NICU	Uneventful
2	Bicornuate uterus	G2P1	Spontaneous	9	-	Ruptured horn	Emergency laparotomy	Neonate lost	Hemorrhagic shock, ICU
3	Unicornuate uterus	G1	Spontaneous	39	Cephalic	None	Vaginal delivery	Female, 3.12 kg	Uneventful
4	Bicornuate uterus	G4P1A2	Ovulation induction	37	Cephalic	None	Elective cesarean	Female, 2.35 kg	Uneventful
5	Bicornuate uterus	G1	Spontaneous	39	Cephalic	None	Elective cesarean	Female, 2.32 kg	Uneventful
6	Unicornuate uterus	G1	Spontaneous	38	Breech	Breech presentation	Elective cesarean	Male, 3.04 kg	Uneventful
7	Unicornuate uterus+ vaginal septum	G1	Spontaneous	37	Cephalic	None	Elective cesarean	Male, 3.23 kg	Uneventful

Case 7

Unicornuate uterus with vaginal septum

A 28-year-old primigravida was found to have a unicornuate uterus with an associated longitudinal vaginal septum. At 37 weeks gestation, she presented with a cephalic fetus and no antenatal complications. Due to the anomaly and structural concerns, an elective cesarean section was planned. A healthy male neonate weighing 3.23 kg was delivered, and both mother and child had an uneventful postoperative course.

DISCUSSION

The prevalence of CUAs varies significantly, with reported rates ranging from 0.06% to 38%. This wide range is attributed to differences in diagnostic techniques, non-standardized classification systems, and variation in the studied populations. Many anomalies go undetected due to a lack of awareness and asymptomatic presentations, particularly in women without reproductive challenges. As a result, CUAs are more frequently diagnosed in women undergoing evaluation for infertility or pregnancy loss.[5] CUAs result from abnormal organogenesis, fusion, or resorption of the Müllerian ducts. These anomalies are broadly categorized into two groups: unification defects (e.g., unicornuate, bicornuate, didelphys uteri) and resorption defects (e.g., septate or subseptate uterus).[6]

Uterine anomalies, particularly untreated forms such as septate and bicornuate uteri, are associated with poor reproductive outcomes. While overall fertility may not differ significantly compared to women with normal uteri, CUAs are strongly linked with increased rates of miscarriage, preterm labor, fetal growth restriction, and malpresentation. Term delivery rates in patients with untreated anomalies such as unicornuate and septate uterus are estimated around 40–50%.[7] Not all women with CUAs exhibit overt symptoms. However, those who do may present with menstrual irregularities, pelvic pain, abnormal bleeding, or complications such as ectopic pregnancy. Importantly, the risk and type of obstetric complications vary depending on the severity and type of anomaly.[8,9]

This case series highlights the obstetric and neonatal outcomes of seven pregnant women with CUAs managed at a tertiary care center in South India. The cases included a spectrum of anomalies—unicornuate, bicornuate, and septate uteri—each known to carry distinct reproductive risks. Despite the rarity of these anomalies in the general population, their clinical significance lies in their association with increased risks of miscarriage, preterm labor, malpresentation, and cesarean delivery.[2]

In our cohort, unicornuate uterus was the most frequently encountered anomaly (3/7 cases), which aligns with reports that, although rare, it poses a high risk for adverse pregnancy outcomes including uterine rupture and fetal malpresentation.[3,10] One of these patients presented with a breech fetus and underwent elective cesarean section, while another achieved a successful vaginal delivery, emphasizing that individualized management based on presentation and stability can yield favorable outcomes. We reported one case of a ruptured rudimentary horn in a woman with a bicornuate uterus during early pregnancy. This reinforces findings in the literature that rudimentary horn pregnancies carry a high risk of rupture, often occurring in the first or second trimester and necessitating prompt surgical intervention.[11] Early detection through detailed first-trimester imaging could potentially improve maternal outcomes in such cases.

Three women with bicornuate uterus completed pregnancies at term, all managed by elective cesarean section due to concern for uterine anomaly and potential complications. This is consistent with published data indicating that bicornuate uteri are associated with poor-term delivery rates and increased cesarean rates due to malpresentation or concerns regarding uterine rupture.[7] The only case of the septate uterus in our series resulted in an uneventful elective cesarean delivery. While septate uteri are the most common anomaly, they are often associated with early pregnancy losses. Our case had a favorable outcome, which may reflect the benefits of early antenatal care and the absence of prior miscarriage history in this patient.[5]

Overall, 5 of 7 patients delivered by cesarean section, consistent with literature showing increased operative delivery rates in women with CUAs. The breech presentation was noted in two cases, a common finding in anomalous uteri due to limited intrauterine space and abnormal fetal lie. Neonatal outcomes were generally favorable, with only one case resulting in fetal loss due to uterine rupture. Importantly, there were no maternal mortalities, underscoring the importance of timely diagnosis and appropriate referral to higher centers. The diversity in presentation and outcome among our cases reinforces the need for personalized obstetric planning. Early imaging—preferably 3D ultrasound or magnetic resonance imaging (MRI) —plays a vital role in anomaly detection and classification.[4] Further, careful monitoring during antenatal care and readiness for surgical intervention is essential in mitigating risks.

CONCLUSION

Pregnancy in women with uterine anomalies is associated with significant obstetric challenges including mal-presentation and increased cesarean delivery rates. Early antenatal diagnosis and individualized delivery planning are crucial for optimizing maternal and neonatal outcomes. Increased clinician awareness is essential to manage these high-risk pregnancies effectively.

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